CLAIMS

1. A display apparatus, comprising:

a pair of oppositely disposed substrates at least one of which is a transparent substrate,

a display layer, disposed between said pair of substrates, for bing placed in an optical state switchable between a light transmission state and a light interruption state, for each pixel unit,

a reflection surface provided on one of said pair of substrates,

a scattering layer disposed on the other substrate opposite to the substrate provided with said reflection surface, and

a light absorption structure or a light reflection structure, disposed at a boundary portion between adjacent pixels on the substrate provided with said reflection surface.

2. An apparatus according to Claim 1, wherein said structure is a projection-like structure or a wall-like structure.

3. An apparatus according to Claim 1 or 2, wherein said structure is a light absorption structure which absorbs not less than 60 % of incident light.

4. An apparatus according to any one of Claims 1 - 3, wherein the following relationship is satisfied:

$$\left|\frac{6\sqrt{2}\cdot d - 9\cdot(2h+d)XY}{8Y^2 - X^2}\right| \leq 0.5p$$

$$X = \frac{1}{9}\left\{2\sqrt{2}\cos\Theta + 2\sqrt{6}\sin\Theta - \sqrt{9 - \left(\cos\Theta + \sqrt{3}\sin\Theta\right)^2}\right\},$$

$$Y = \frac{1}{9}\left\{\cos\Theta + \sqrt{3}\sin\Theta + 2\sqrt{18 - 2\cdot\left(\cos\Theta + \sqrt{3}\sin\Theta\right)^2}\right\},$$

wherein d represents a height of said structure, p represents a pixel pitch, h represents a distance between said scattering layer and said structure, and T represents a scattering angle defined as 1/2 of an angle at which an intensity of light transmitted through said scattering layer while being scattered in said scattering layer is 1/2 of an intensity of light transmitted through said scattering layer in a straight line.

5. An apparatus according to Claim 4, wherein the height d of said structure is not less than 5 μm.

6. An apparatus according to any one of Claims 1 - 5, wherein each pixel has a rectangular shape, and said structure is disposed at a boundary portion between adjacent pixels along at least a long side of a rectangular pixel.

7. An apparatus according to any one of Claims 1 - 5, wherein each pixel has a rectangular shape having a side located at its lower portion during image formation, and said structure is disposed along said side.

8. An apparatus according to any one of Claims 1 - 7, wherein said structure has a refractive index n_w which is larger than a refractive index n_d of said display layer.

9. An apparatus according to any one of Claims 1 - 8, wherein said display layer is a liquid crystal layer.

10. An apparatus according to any one of Claims 1 - 8, wherein said display layer comprises light absorbing charged particles and a liquid for dispersing the charged particles therein.

11. An apparatus according to Claim 10, wherein said display layer is partitioned by a partition wall for each pixel and when said display layer is in a light transmission state, said structure is formed of the charged particles which are deposited along the partition wall.

12. An apparatus according to any one of Claims 1 - 11, wherein said apparatus has a resolution of not less than 200 pixels per inch.

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